

Certificate of Conformity

Certificate Number: CN-PV-230421

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant: REFU Elektronik GmbH

Marktstrasse 185,72793, Pfullingen, Germany

Product: Solar Grid-tied Inverter

Ratings & Principle See appendix of Certificate of Conformity

Characteristics:

REFUSOI 15K-2T (853P015.200)
REFUSOI 17K-2T (853P017.200)
REFUSOI 20K-2T (853P020.200)
REFUSOI 22K-2T (853P022.200)

REFUSOI 24K-2T (853P024.200)

Brand Name<s>: REFUsol

Product Complies with: EN 50549-1: 2019, Requirements for generating plants to be connected

in parallel with distribution networks

Part 1: Connection to a LV distribution network - Generating

plants up to and including type B

Type approval for type B

Certificate Issuing Office

Name & Address:

Intertek Testing Services Ltd. Shanghai

West Area, 2nd Floor, No. 707, Zhangyang Road

China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012

Test Report No.<s>: 230524089GZU-003

According to Annex H of the standard EN 50549-1:2019, generating plants compliant with the clauses of this European Standard are considered to be compliant with the relevant Article of COMMISSION REGULATION (EU) 2016/631, provided that all settings as provided by the DSO and the responsible party are complied with. Additional information in Appendix.

Signature

Certification Manager: Grady Ye

Date: 26 July 2023

ACCREDIA 5

PRD N° 306B

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230421

Model	REFUsol 15K- 2T (853P015.200)	REFUsol 17K- 2T (853P017.200)	REFUsol 22K- 2T (853P022.200)	REFUsol 20K- 2T (853P020.200)	REFUsol 24K- 2T (853P024.200)	
Max. DC input voltage	(853P013.200) (853P017.200) (853P022.200) (853P024.200) 1100V					
Max. Input current	26A/26A					
Max. PV Isc	36A/36A					
Nominal Grid voltage	3/N/PE, 230V/400V					
Rated Output Current	3*21.7A	3*24.6A	3*31.9A	3*29.0A	3*34.8A	
Nominal Grid frequency	50/60Hz					
Rated output Power	15000W	17000W	22000W	20000W	24000W	
Rated Apparent Power	15000VA	17000VA	22000VA	20000VA	24000VA	
Max. Output power	16500VA	18700VA	24200VA	22000VA	26400VA	
Power Factor	1(adjustable +/-0.8)					
Ingress Protection	IP65					
Operating Temperature Range	-30℃ ~+60℃					
Protective Class	Class I					
Software version	V010000					

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Interface protection setting	ngs according to EN 50549	9-1:2019			
Parameter	Max. disconnection time	Min. operate time	Trip value		
Undervoltage threshold	100s	0.1s	Trip value Config. from		
stage 1 [27 <]		(0.1 s steps)	0.2 to 1 Un		
			(0.01 Un steps)		
Undervoltage threshold	5s	0.1s	Trip value Config. from		
stage 2 [27 <<]		(0.05 s steps)	0.2 to 1 Un		
	<i>" </i>	W 7	(0.01 Un steps)		
Overvoltage threshold	100s	0.1s	Trip value Config. from		
stage 1 [59 >]		(0.1 s steps)	1.0 to 1.2 Un		
			(0.01 Un steps)		
Overvoltage threshold	5s	0.1s	Trip value Config. from		
stage 2 [59>>]		(0.05 s steps)	1.0 to 1.3 Un		
			(0.01 Un steps)		
Overvoltage 10 min	Trip time Config	Trip time Config≤ 3s not adjustable			
mean protection	Time delay	setting = 0 ms	1.0 to 1.15Un		
		0	(0.01 Un steps)		
Underfrequency	100s	0.1s	Trip value Config. from		
threshold stage 1 [81 <]	10	(0.1s steps)	47.0 to 50.0Hz		
			(0.1Hz steps)		
Underfrequency	5s	0.1s	Trip value Config. from		
threshold stage 2 [81		(0.05 s steps)	47.0 to 50.0Hz		
<<]		790	(0.1Hz steps)		
Overfrequency	100s	0.1s	Trip value Config. from		
threshold stage 1 [81 >]	. W	(0.1s steps)	50.0 to 52.0Hz		
			(0.1Hz steps)		
Overfrequency	5s	0.1s	Trip value Config. from		
threshold stage 2		(0.05 s steps)	50.0 to 52.0Hz		
[81 >>]		0	(0.1Hz steps)		
Starting to and reconnect	ion settings for voltage	50%-120% adjustable, 85%Un≤ U≤1.10Un default			
Starting to generate elect	rical power	47Hz – 52Hz adjustable, 49.5Hz≤ U≤50.1Hz default			
Reconnection settings for	frequency	47Hz – 52Hz adjustable, 49.5Hz≤ U≤50.2Hz default			
Observation time		10s-60s adjustable, 60s default			
Active power increase gra	ndient	6%-3000%/min adjustable, 10%/min default			
Permanent DC injection		0.5% of rate	0.5% of rated inverter output		
Loss of mains according to	O EN 62116	Within 2s			

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